The Reactive Descent Model: A Post-Aether Framework for Cosmogenesis

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Tagline: A unifying framework for cosmogenesis under a reactive, pressure-based substrate.

Abstract

The Reactive Descent Model (RDM) proposes that the large-scale behavior of the universe — including cosmic redshift, structure formation, and gravitational effects — arises not from metric expansion, but from continuous descent through a semi-viscous, reactive medium. This medium is not aether in the classical sense, but a dynamic carrier whose properties are shaped by matter–energy interaction.

On Michelson–Morley (Direct and Defensible)

RDM does not reject the Michelson–Morley result. It uses it as a boundary condition.

If a medium exists, it must be non-static and locally reactive - one that avoids producing the classical aether wind signature. Unlike the 19th-century assumption of a rigid backdrop, RDM posits that the medium deforms and co-moves in response to energy and mass, much like a pressure-sensitive fluid.

Thus, local invariance of light speed is preserved. RDM is compatible with Lorentz symmetry, and observationally indistinguishable from vacuum models at small scales — but diverges over cosmic distances and long timeframes, offering new explanations for curvature, inertia, and form persistence.

Key Premises

- The universe descends through a compressible, reactive field, not an expanding void.
- Structure and redshift arise from flow geometry, not intrinsic acceleration.
- Gravity is reframed as pressure differential, not attraction-at-a-distance.
- The medium has memory (in the form of persistent gradients and wakes), enabling the survival of pattern, orbit, and form.

Why Bother?

This model preserves all observed relativistic behavior locally while offering a physical substrate capable of carrying interaction, shaping structure, and solving for some unsolved emergent phenomena. It is compatible with GR and SR under locality but reframes cosmogenesis without requiring dark energy or inflation.